

CLAIMS

1 A method of compensating tilt of an optical or magneto-optical disc exhibiting unknown tilt when placed in an apparatus for reading and/or writing data from and/or onto
5 said optical or magneto-optical disc, comprising the steps of:

- a) detecting an amount of one element of the group comprising the tilt of said disc, a coma aberration resulting from said tilt, and a physical quantity related to said coma aberration,
- b) providing a holographic optical element in a light path of an optical read/write unit of
10 said apparatus, said holographic optical element containing a plurality of holograms each defining a phase profile able to compensate at least a specific coma amount,
- c) selecting among said plurality of holograms a hologram defining a phase profile corresponding to the amount of tilt or coma detected in step a), and
- d) using the selected hologram for compensating the detected amount of tilt or coma.

15 2 The method of claim 1, wherein said selecting step is performed by changing a relative spatial relationship between said holographic optical element and a polarization direction of a light beam impinging on said holographic optical element in said optical read/write unit.

3 The method of claim 2, wherein said relative spatial relationship is changed by
20 rotating said holographic optical element.

4 A device for compensating tilt of an optical or magneto-optical disc exhibiting unknown tilt when placed in an apparatus for reading and/or writing data from and/or onto said optical or magneto-optical disc, comprising:

- a) means for detecting an amount of one element of the group comprising the tilt of said
25 disc, a coma aberration resulting from said tilt, and a physical quantity related to said coma aberration,
- b) holographic optical element disposed in a light path of an optical read/write unit of said apparatus, said holographic optical element containing a plurality of holograms each defining a phase profile able to compensate at least a specific coma amount, and
- c) means for selecting among said plurality of holograms a hologram defining a phase
30 profile corresponding to the amount of tilt or coma which has been detected by said detecting means and which is to be compensated.

5 The device of claim 4, wherein said selecting means comprises means for changing a relative spatial relationship between said holographic optical element and a polarization direction of a light beam impinging on said holographic optical element.

6 The device of claim 5, wherein said changing means comprises means for rotating
5 said holographic optical element.

7 An apparatus for reading and/or writing data from and/or onto an optical or magneto-optical disc, said apparatus comprising:

a) an optical unit able to read and/or write data from and/or onto an optical or magneto-optical disc placed into said apparatus, and

10 b) means for compensating tilt of said disc, said compensating means comprising:

 b1) means for detecting an amount of one element of the group comprising the tilt of said disc, a coma aberration resulting from said tilt, and a physical quantity related to said coma aberration,

 b2) a holographic optical element disposed in a light path of said optical
15 read/write unit of said apparatus, said holographic optical element containing a plurality of holograms each defining a phase profile able to compensate at least a specific coma amount, and

 b3) means for selecting among said plurality of holograms a hologram defining a phase profile corresponding to the amount of tilt or coma which has been detected by said
20 detecting means and which is to be compensated.

8 The apparatus of claim 7, wherein said selecting means comprises means for changing a relative spatial relationship between said holographic optical element and a polarization direction of a light beam impinging on said holographic optical element.

9 The apparatus of claim 8, wherein said changing means comprises means for rotating
25 said holographic optical element.

10 A holographic optical element for use in an apparatus for reading and/or writing data from and/or onto at least one optical or magneto-optical disc placed in said apparatus, said disc exhibiting unknown tilt when placed in said apparatus, said holographic optical element comprising a substrate containing a plurality of holograms defining a corresponding plurality
30 of phase profiles, each phase profile being able to compensate a specific amount of coma corresponding to a tilt amount likely to be exhibited by a disc placed in said apparatus.